

## **What is claimed is:**

**[Claim 1]** A ventilation system for a toilet, comprising; a toilet bowl having a gas trap and a rim; a plurality of flush holes formed in said rim; a toilet tank having a flush handle, a water refill tube, an overflow pipe in fluid communication with the flush holes and an exhaust pipe providing fluid communication between the toilet tank and the gas trap; a fan box disposed within the toilet tank; an air compartment disposed within the fan box in fluid communication with the toilet overflow pipe such that air follows a path of travel through the flush holes and through the overflow pipe into the air compartment; a water trap disposed within the fan box adjacent the air compartment with a first side of the water trap in fluid communication with water in the holding tank and a second side in fluid communication with the air compartment such that water, at normal operating levels in the tank, enters the water trap to provide a seal between the air compartment and that part of the holding tank not containing water; a fan compartment having an inlet and an outlet disposed within the fan box, adjacent the air compartment with the inlet in fluid communication with the water compartment and the outlet in fluid communication with the exhaust pipe; a fan disposed within the fan compartment such that when the fan is activated, air is drawn through the flush holes up through the overflow pipe into the water compartment, through the fan compartment and into the exhaust pipe; and an activation switch communicatively coupled to the fan whereby manipulation of the activation switch completes an electrical circuit thereby activating the fan which draws air from the bowl through the flush holes and overflow pipe into the air compartment, into the fan compartment and through the exhaust pipe into the toilet drain downstream of the gas trap.

**[Claim 2]** The ventilation system of claim 1, further comprising: the air compartment being equipped with an air flap, said air flap operative to prevent gas in the fan compartment from entering the air compartment.

**[Claim 3]** The ventilation system of claim 1, further comprising: the activation switch being communicatively coupled to the flush handle so that manipulation of the handle in an upward direction completes an electrical circuit activating the fan.

**[Claim 4]** The ventilation system of claim 3, further comprising: the flush handle, when depressed, being adapted to interrupt the electrical circuit to deactivate the fan.

**[Claim 5]** The ventilation system of claim 1, further comprising: the water refill tube adapted to empty into the water trap so that when the water trap is full refill water flows into the toilet bowl as well as the water tank; the water in the water tank being changed during every flush to inhibit water stagnation and bacterial growth.